

# The Mounted Warrior and Tomorrow's NBC Protection

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Every soldier has worn chemical protective gear. Even new recruits appreciate how the mask works to save lives, especially after they remove it in a gas chamber. Trust and confidence in your equipment takes on a whole new meaning with the first whiff of tear (CS) gas.

Military and civilian combat developers at the Armor Center and a number of other agencies are working to provide future Mounted Warriors with improved nuclear, biological, and chemical (NBC) equipment.

Currently, Armor and Cavalry soldiers are issued the M42 series protective mask. It protects the head, eyes, and respiratory system from becoming exposed to chemical-biological (CB) agents in the air. The next generation protective mask for combat vehicle crewmen (CVC) is the M51 Joint Service General Purpose Mask (JSGPM).

Lighter than the M42 and weighing approximately one-and-a-half pounds, the JSGPM provides the soldier with enhanced protection from CB agents. It is also equipped with two additional filters to equalize toxic industrial materials, which is a major concern for the future battlefield. One of the many unique features of this new mask is the ability to change filters in a contaminated environment, giving the soldier the ability to put new filters on the mask during decontamination operations without exposing the face to open air. The new filters are smaller, lighter, and provide the user with a method to determine if the filter is serviceable.

The mask has a flexible, soft single lens that provides the wearer with increased peripheral vision and the enhanced capability to look through vehicle weapons sights and periscopes. This ability also allows the use of night vision goggles while in MOPP IV and provides for increased situational awareness.

The JSGPM decreases the pressure and thermal burden on the face and is easier to breath through. Two mask filters allow up to 50 liters of air per minute to pass through with ease. This lessens the difficulty in breathing and decreases soldier fatigue. The old butyl rubber hood has been replaced with a flame resistant material to protect against a vehicle fire and a new drinking system, which increases hydration capacity.



The JSGPM provides the Mounted Warrior with the capability to continue to use the vehicle filtration system. When disconnected, the hose can remain in the vehicle due to the lightweight filters on the mask. This reduces the weight and bulk when compared to the protective mask currently used by CVC. The mask has a removable communications cord that allows the dismounted soldier to work without concern for attached hardware hanging from the mask.

For CB protection below the neck, the battle dress overgarment and joint service lightweight integrated suit technology protects the body against all CB agents. Advancing technology has provided all ground soldiers with a lightweight CB garment, but still requires the Mounted Warrior and aviators to wear the Nomex coverall to protect against flame hazards. Both aviators and mounted crewmen require a flame resistant garment. In aircraft cockpits, as in armored vehicles, workspace is limited. Wearing one layer for CB protection and one for flame protection impedes personal mobility and increases fatigue.

The new joint protective aircrew ensemble (JPACE) will provide both CB and flame resistant protection with one layer. JPACE is currently being adopted for the CVC community to increase the soldier's capability. Many design changes have been adapted to increase the garment's function.

The JPACE garment is a one-piece coverall that looks similar to the current flight suit. It will be available in both desert tan and woodland camouflage patterns, and has both CB and flame resis-



tant qualities. The one-piece design helps prevent flames from traveling up the back of the shirt.

Two pockets on the upper arm sleeves, one small and one large, provide space for needed items. JPACE also offers two pockets on the lower legs, which provide easy access in the sitting position. Velcro patches on the upper arms will allow for the attachment of the American flag, unit patches, or reflective tape. There is also velcro on the chest to attach an aviator-style leather nametag. A full-length zipper, from the front to the rear of the suit, allows for quick and easy removal.

Each suit comes with a repair kit, which enables the soldier to repair small holes or tears. The patches are made of the same protective material and have an adhesive backing for quick field repairs. To ensure that the suit protects against wind-driven and dusty agents, the fabric developers are conducting rotor-wash and wind tests.

The JSGPM and JPACE are both joint programs with participation from all services. This will ease the logistical burden by ensuring the availability of replacement CB garments is in the system anywhere the warfighter goes. With full-rate production, these new items should be issued to soldiers by fiscal year 2007. While developmental testing, operational testing, and user evaluations are ongoing, the Armor Center is striving to ensure that all Mounted Warriors receive the best NBC equipment for the future battlefield.

